## New claims:

- A process for preparing optically active 2-amino-, 2-chloro-,
   2-hydroxy- or 2-alkoxy-1-alkanols by catalytically hydrogenating appropriate optically active 2-amino-,
   2-chloro-, 2-hydroxy- and 2-alkoxycarboxylic acids or their acid derivatives, which comprises carrying out the hydrogenation in the presence of catalysts comprising palladium and rhenium or platinum and rhenium.
  - 2. A process as claimed in claim 1, wherein optically active 2-amino-, 2-chloro-, 2-hydroxy- or 2-alkoxycarboxylic acids or their esters of the formula I

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where the radicals are defined as follows:

- R1: straight-chain or branched C<sub>1</sub>-C<sub>12</sub>-alkyl,

  C<sub>7</sub>-C<sub>12</sub>-aralkyl or C<sub>6</sub>-C<sub>10</sub>-aryl, each of which may be substituted by NR<sup>3</sup>R<sup>4</sup>, OH, COOH and/or further groups stable under the reaction conditions,
- R<sup>2</sup>: hydrogen, straight-chain or branched  $C_1$ - $C_{12}$ -alkyl or  $C_3$ - $C_8$ -cycloalkyl,
  - X: chlorine, NR<sup>5</sup>R<sup>6</sup> or OR<sup>7</sup>,
- R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup>:

  each independently hydrogen, straight-chain or branched

  C<sub>1</sub>-C<sub>12</sub>-alkyl, C<sub>7</sub>-C<sub>12</sub>-aralkyl, C<sub>6</sub>-C<sub>10</sub>-aryl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl

  or C<sub>3</sub>-C<sub>8</sub>-cycloalkyl in which one CH<sub>2</sub> group is replaced by

  O or NR<sup>8</sup>,
- 40  $R^3$  and  $R^4$  and also  $R^5$  and  $R^6$ :
  also each independently together  $-(CH_2)_m-$ , where m is an integer from 4 to 7,
  - $R^1$  and  $R^5$ :
- also together  $-(CH_2)_n$  where n is an integer from 2 to 6,

 $R^7$ : hydrogen, straight-chain or branched  $C_1$ - $C_{12}$ -alkyl or  $C_3$ - $C_8$ -cycloalkyl,

 $R^1$  and  $R^7$ :

5 also together  $-(CH_2)_n-$ , where n is an integer from 2 to 6 and

R8: hydrogen, straight-chain or branched  $C_1-C_{12}$ -alkyl,  $C_7-C_{12}$ -aralkyl or  $C_6-C_{10}$ -aryl,

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or their acid anhydrides are used and hydrogenated to the corresponding optically active alcohols of the formula II

15  $\begin{array}{c|c} R^1 & CH & --- & CH_2OH \\ & & & \\$ 

in which R1 and X are each as defined above.

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- A process as claimed in claims 1 and 2, wherein the palladium/rhenium or platinum/rhenium catalysts comprise at least one element from the group of the elements titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper, zinc, zirconium, molybdenum, silver, tin, tungsten, lead, lanthanum and cerium.
- A process as claimed in claims 1 and 2, wherein the palladium/rhenium or platinum/rhenium catalysts comprise at least one element from the group of the elements silver, molybdenum, tungsten and tin.
- A process as claimed in any of claims 1 to 4, wherein the palladium/rhenium or platinum/rhenium catalysts are used unsupported or applied to a support.
  - 6. A process as claimed in any of claims 1 to 5, wherein the weight ratio of the elements palladium or platinum to rhenium is from 100:1 to 0.01:1.

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7. A process as claimed in any of claims 1 to 6, wherein the weight ratio of the elements palladium or platinum to rhenium is from 50:1 to 0.05:1.

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8. A process as claimed in any of claims 1 to 7, wherein the weight ratio of the elements palladium or platinum to the at least one further element of the catalyst is from 100:1 to 10:1.

- 9. A process as claimed in any of claims 1 to 8, wherein the hydrogenation is carried out in the presence of an acid.
- 10. A process as claimed in any of claims 1 to 9, wherein the hydrogenation is carried out at a temperature of from 30 to 140°C.